

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant/ Appellant:	Michael Melkonian; Bjoern Podola	Confirmation No.	9911
Serial No.:	10/565,537		
Filed:	July 21, 2004	Customer No.:	28863
Examiner:	Taeyoon Kim		
Group Art Unit:	1651		
Docket No.:	1020-018US01		
Title:	METHOD AND DEVICE FOR CULTIVATING EUCARYOTIC MICROORGANISMS OR BLUE ALGAE, AND BIOSENSOR WITH CULTIVATED EUCARYOTIC MICROORGANISMS OR BLUE ALGAE		

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450,
Alexandria, VA 22313

Sir:

This is a Reply Brief responsive to the Examiner's Answer mailed on Oct. 6, 2008. No fees are believed to be due.

Please charge any additional fees that may be required or credit any overpayment to Deposit Account No. 50-1778.

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SUPPLEMENTAL ARGUMENT

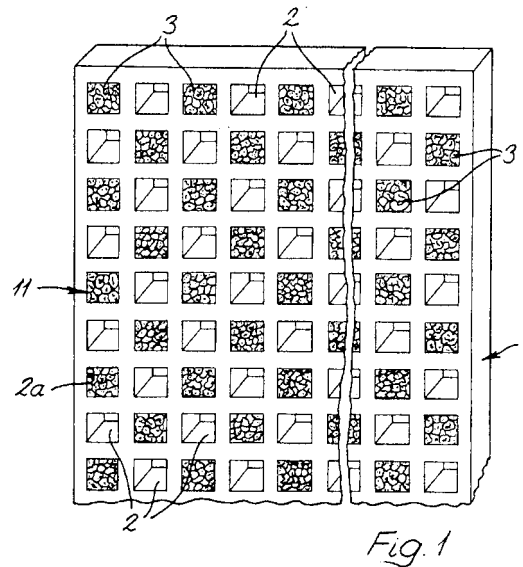
The following arguments supplement the arguments presented in Appellant's Appeal Brief, and are responsive to the Examiner's Answer to the Appeal Brief. The following arguments supplement Appellant's previous arguments that claim 18 is not anticipated by Davies (US 4,693,983).

In the Examiner's Answer, the Examiner once again characterized the structure of Davies as being sheet-shaped. The Examiner further characterized the colonized channels of Davies as being a major surface of a sheet-shaped perforated support. Based on these interpretations of Davies (and other statements), the Examiner concluded that Davies discloses the features of Applicant's claims.

Independent claim 18 recites a method for cultivating eukaryotic microorganisms or blue algae. The method comprises applying the eukaryotic microorganisms or blue algae to a first major surface of a sheet-shaped perforated support, wherein the sheet-shaped perforated support is essentially impermeable to the eukaryotic microorganisms or blue algae and wherein the eukaryotic microorganisms or blue algae remain immobilized on the first major surface and are adapted to be removed, supplying an aqueous solution to a second major surface of the sheet-shaped perforated support, wherein the aqueous solution flows along the second major surface of the sheet-shaped perforated support and wherein a portion of the aqueous solution flowing along the second major surface of the sheet-shaped perforated substrate is essentially transported by capillary forces from the second major surface to the first major surface through the sheet-shaped perforated support, and growing the eukaryotic microorganisms or blue algae on the first major surface of the sheet-shaped perforated support.

As explained in detail the Appeal Brief, Davies fails to disclose or suggest the use of anything that could be reasonably considered to be a sheet-shaped perforated support. Moreover, even if the structure described by Davies could be construed to define a sheet-shaped perforated support, the support of Davies does not have eukaryotic microorganisms grown on a first major surface of the support and an aqueous solution supplied along a second major surface of the support. For at least these reasons, the anticipation rejections based on Davies should be withdrawn.

Davies cultivates biological material within channels of a support matrix, e.g., as shown in FIG. 1, reproduced below.



Nothing in Davies suggests the use of a sheet-shaped perforated support essentially impermeable to the eukaryotic microorganisms or blue algae. Furthermore, nothing in Davies suggests applying the eukaryotic microorganisms or blue algae to a first major surface of a sheet-shaped perforated support. In addition, nothing in Davies suggests supplying an aqueous solution to a second major surface of the sheet-shaped perforated support, wherein the aqueous solution flows along the second major surface of the sheet-shaped perforated support and wherein a portion of the aqueous solution flowing along the second major surface of the sheet-shaped perforated substrate is essentially transported by capillary forces from the second major surface to the first major surface through the sheet-shaped perforated support.

Even if the support matrix 1 of Davies could be construed as a sheet-shaped perforated support, eukaryotic microorganisms or blue algae are not applied or grown on any major surface of the support matrix 1. Instead, Davies teaches plant cells 3 being contained within channels 2a of support matrix 1. This is not suggestive of the features recited in claim 18. Accordingly, the rejections must be reversed.

Davies teaches liquid or gas being transferred between channels 2a. In Davies, aqueous solution does not flow along any major surface. Moreover, an aqueous solution is never transported by capillary forces from the second major surface to the first major surface through the sheet-shaped perforated support.

In short, Davies fails to teach the use of any sheet-shaped perforated support, but uses a support matrix 1 in which plant cells 3 are contained within channels 2a of support matrix 1. Moreover, even if support matrix 1 were construed as being some type of sheet-shaped perforated support, plant cells 3 are not disposed on any major surface of support matrix 1, but are instead contained within channels 2a.

In addition, in Davies, an aqueous solution does not flow along any major surface of support matrix 1, much less flow along a second major surface to be transported by capillary forces from the second major surface to the first major surface. Indeed, it is difficult to fathom how or why an aqueous solution would be distributed across any major surface of the support matrix 1 of Davies insofar as plant cells 3 are not disposed on any major surface of support matrix 1, but are instead contained within channels 2a.

In the Examiner's Answer, the Examiner indicated that support matrix 1 of Davies is considered to be sheet-shaped. Appellant submits that this interpretation is erroneous. Support matrix 1 is just that, a "matrix" that defines "channels" for plant growth, and is not anything that could be reasonably construed as being a sheet-shaped perforated support.

In the Examiner's Answer, the Examiner also indicated that the surface area formed by the colonized channels in Davies is reasonably interpreted as being eukaryotic microorganisms or blue algae applied to a first major surface of a sheet-shaped perforated support. Applicant submits that this interpretation is also erroneous.

To the extent that support matrix 1 could be construed as defining any sheet-shaped form, the inner walls of channels 2a cannot be reasonably construed as being major surfaces of support matrix 1. Such an interpretation is nonsensical. For example, even if matrix 1 is considered to be a sheet-shaped perforated support, the inner walls of channels 2a cannot be considered major surfaces of support matrix 1.

Furthermore, even if Davies suggests liquid and/or gas nutrients being transferred between first and second channels across porous walls via capillary forces, these features are nothing akin to those recited in claim 18. Again, claim 18 requires an aqueous solution to be supplied along a second major surface of sheet-shaped perforated support, and eukaryotic microorganisms or blue algae to be grown on a first major surface of the sheet-shaped perforated support, wherein capillary forces transport the aqueous solution through sheet-shaped perforated support. In Davies, plant cells 3 are contained within channels 2a of support matrix 1 and an aqueous solution is not transferred from one major surface of support matrix 1 associated with the supply of aqueous solution to another major surface of support matrix 1 associated with eukaryotic microorganisms or blue algae.

Finally, in the Examiner's Answer, the Examiner admitted that the tubular support matrix of Halling (WO 90/02170), which has an inner flow channel, is not a sheet-shaped support. See Page 8 of the Examiner's Answer. Given this recognition that the structure of Halling with an inner flow channel is not a sheet-shaped support, it is difficult to understand why the Examiner is insisting that the structure of Davies is a sheet-shaped perforated support essentially impermeable to the eukaryotic microorganisms or blue algae. The structure of Davies, like the structure of Halling, has channels and is not a sheet-shaped perforated support essentially impermeable to the eukaryotic microorganisms or blue algae.

In summary, nothing in Davies suggests applying eukaryotic microorganisms or blue algae to a first major surface of a sheet-shaped perforated support. In addition, nothing in Davies suggests supplying an aqueous solution to a second major surface of the sheet-shaped perforated support, wherein the aqueous solution flows along the second major surface of the sheet-shaped perforated support and wherein a portion of the aqueous solution flowing along the second major surface of the sheet-shaped perforated substrate is essentially transported by capillary forces from the second major surface to the first major surface through the sheet-shaped perforated support.

CONCLUSION OF SUPPLEMENTAL ARGUMENT

In view of Appellant's supplemental arguments and previous arguments presented in the Appeal Brief, the final rejections of Appellant's claims are improper and should be reversed. Reversal of all pending rejections and allowance of all pending claims is respectfully requested.

Date:

Dec. 3, 2008

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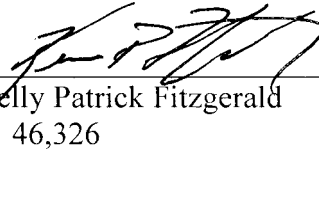
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